UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,446	11/25/2003	Gary R. Louthan	H0005295	5968

7590 06/08/2005

Ephraim Starr
Honeywell International Inc.
Suite 200
23326 Hawthorne Blvd.
Torrance, CA 90505

EXAMINER	
EDGAR, RICHARD A	

ART UNIT	PAPER NUMBER
3745	

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/723,446	LOUTHAN ET AL.	
	Examiner	Art Unit	
	Richard Edgar	3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2003 under 37 CFR § 1.53(b)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Independent claim 17 recites an assembly, whereas dependent claim 19 recites a turbocharger.

Claim 20 is objected to because of the following informalities: Independent claim 20 recites "the z-plane" as compared with the other independent claims which introduce the element as "a z-plane". The claim is not indefinite however, since any plane satisfies the claim as it is written. Appropriate correction is required.

Claims 15 and 17 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 3 and 13, respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

One having ordinary skill in the art cannot quantify "1.6 of the diameters" and therefore cannot determine what is being claimed.

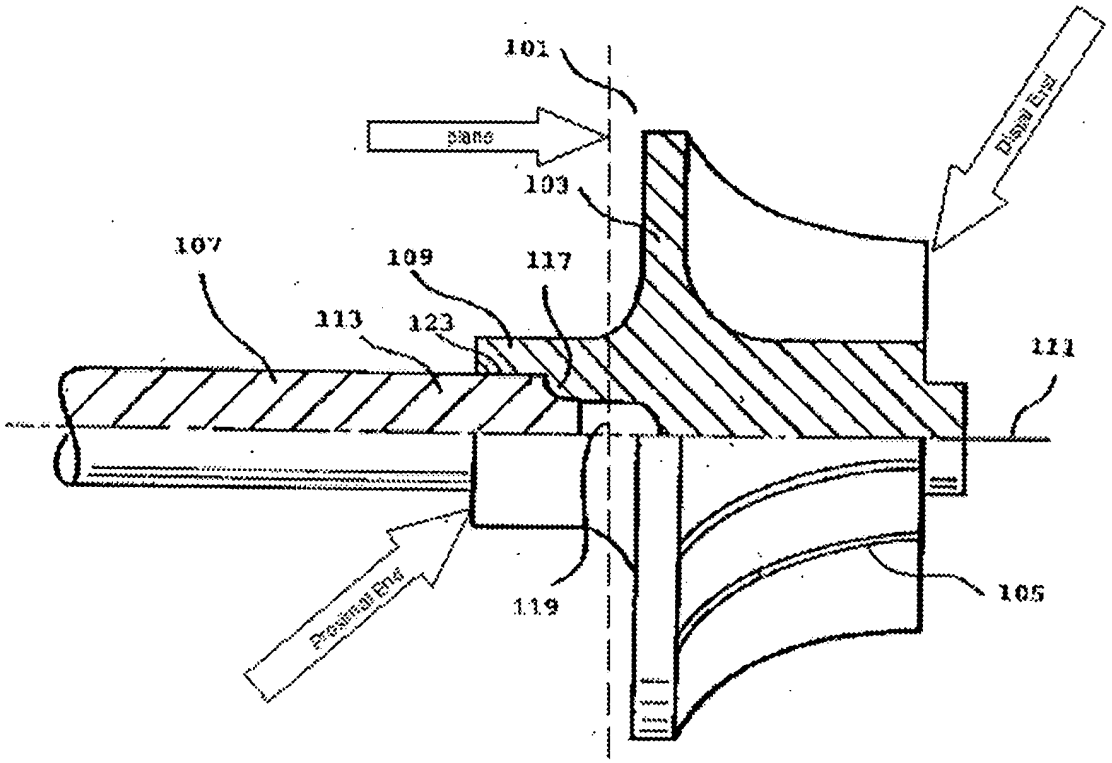
Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 4-5, 7-8, 10, 12-14, 17-18, and as far as claim 9 is definite, are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent Application Publication No. 2005/0036893 (Decker hereinafter).

Decker teaches a compressor wheel comprising: titanium (see paragraph 0029); a proximate end; a distal end; an axis of rotation 111; a plane positioned between the proximate end and the distal end; and a joint 119 having an axis coincident with the axis of rotation and an end surface positioned between the plane and the distal end. See annotation on the following page.



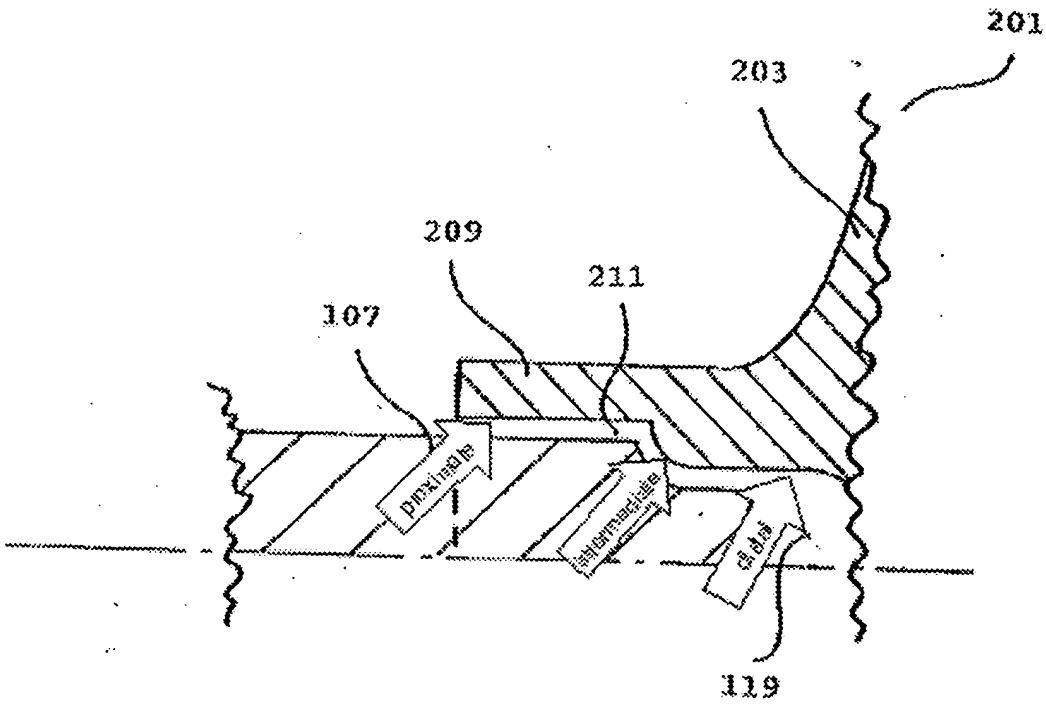
The joint is capable of receiving a balancing spindle wherein the end of the spindle would extend beyond the plane.

The compressor wheel is a turbocharger compressor wheel (see Abstract).

Fig. 1 illustrates the end surface of the joint 119 as elliptical.

The titanium wheel is preferably a titanium alloy (see paragraph 0032).

Fig. 2 illustrates the joint 119 has a proximate, intermediate and distal portion. See annotation on the following page.



Due to the location of the joint 119, the peak principle operational stress of the compressor wheel inherently occurs proximate to the end surface and proximate to the axis of rotation and does not exceed the yield stress.

The joint 119 is capable of receiving a compressor shaft wherein the end does not extend beyond the plane.

The compressor comprises a shaft 107 positioned in the joint 119, whereby said shaft has a distal end that does not extend beyond the plane.

The shaft is a turbocharger shaft (see Abstract).

Decker also discloses an assembly comprising: a compressor wheel 103, the compressor wheel comprising a titanium alloy, a proximate end, a distal end, and axis of

rotation, a plane positioned between the proximate end and the distal end, and a joint 119 having an axis coincident with the axis of rotation 111 and an end surface positioned between the plane and the distal end; and a compressor shaft 107 positioned in the joint and having a distal end that does not extend beyond the plane.

Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 6,032,466 (Woollenweber et al. hereinafter).

Woollenweber et al. disclose a turbocharger having a shaft 15 joined to a turbine wheel 30 and a compressor 16.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application Publication No. 2005/0036893 (Decker hereinafter).

Decker discloses a joint having a joint end 119 which is rounded, but does not disclose an elliptical shape with a radius to height ratio of either 1:1 (claim 11) or 3:1 (claims 6).

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to manufacture the joint end with a

radius to height ratio of either 1:1 or 3:1 because Applicants have not disclosed that the specific ratios provide an advantage, are used for a particular purpose, or solve a stated problem. One having ordinary skill in the art, furthermore, would have expected Decker's joint end and Applicants' invention to perform equally well with either the geometry shown by Decker or the claimed ratios because each geometry would perform the same function of minimizing stress concentrations at the end of the joint.

Therefore, it would have been *prima facie* obvious to modify Decker to obtain the invention as specified in claims 6 and 11 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Decker.

Claims 3, 15-16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application Publication No. 2005/0036893 (Decker hereinafter) as applied to claim 1 above, and further in view of Applicants' admitted prior art.

Decker discloses a compressor wheel having a shaft 107 inserted into a joint whereby a volume of the joint 119 comprises a void wherein the shaft does not penetrate. Decker does not disclose how the compressor wheel is balanced before the shaft is fit therein.

Applicants have admitted in the original disclosure, page 9, lines 3-6 that boreless compressor wheels are balanced by a spindle inserted into the joint, whereby the depth that the spindle is inserted is limited by the depth of the joint.

Therefore, since Decker is a boreless compressor wheel and Applicants have admitted that boreless compressor wheels are balanced by a spindle being inserted to the depth of the compressor joint, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to balance the Decker compressor wheel by inserting a spindle into the full depth of the joint, thereby crossing the plane, for the purpose of balancing the compressor wheel as accurately as possible.

Cited Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimizu (U.S. Patent Application Publication No. 2004/0057834) also shows a compressor wheel having a joint which crosses a plane whereby the shaft does not. See Fig. 4.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard Edgar
Examiner
Art Unit 3745

RE

EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700

6/4/05